

c.) Amendments to the Claims – None.

The status of the claims is as follows:

Claims 1-22. (canceled).

Claim 23. (previously presented) A composite comprising nanotubes wherein the nanotubes have an aspect ratio, orientation and alignment, which provides said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising only PET.

Claim 24. (previously presented) The composite of claim 23 wherein the aspect ratio of each nanotube is at least 100:1.

Claim 25. (previously presented) The composite of claim 23 wherein the nanotubes are in contact with each other along their longitudinal axes such that the nanotubes that are in contact have an effective length longer than a single nanotube.

Claim 26. (previously presented) The composite of claim 23 wherein the nanotubes are dispersed homogeneously in at least a portion of said composite.

Claim 27. (previously presented) The composite of claim 23 wherein the nanotubes are dispersed in a gradient fashion in at least a portion of said composite.

Claim 28. (previously presented) The composite of claim 23 wherein the nanotubes are dispersed on at least one surface of an object.

Claim 29. (previously presented) The composite of claim 23 wherein the nanotubes are selected from the group consisting of straight and bent multi-wall nanotubes, straight and bent single-wall nanotubes, by-products of nanotube preparations, and combinations thereof.

Claim 30. (previously presented) The composite of claim 23 wherein the nanotubes comprise about 0.001 to about 15.0 weight percent of the composite.

Claim 31. (previously presented) The composite of claim 23 wherein the nanotubes comprise about 0.01 to about 5.0 weight percent of the composite.

Claim 32. (previously presented) The composite of claim 23 wherein the nanotubes comprise from about 0.1 to about 1.5 weight percent of the composite.

Claim 33. (previously presented) The composite of claim 23 wherein the nanotubes are comprised of carbon, boron nitride, SiC or combinations thereof.

Claim 34. (previously presented) The composite of claim 23 further comprising a polymeric material.

Claim 35. (previously presented) The composite of claim 34 wherein the polymeric material is selected from the group consisting of a thermoplastic polymer, a thermoset polymer, a non-carbonizable polymer, an elastomer, a natural polymer, and combinations thereof.

Claim 36. (previously presented) The composite of claim 35 wherein the natural polymer is selected from the group consisting of cellulose, gelatin, chitin, polypeptides, polysaccharides, polymeric materials derived from plants, animals, and microorganisms, and combinations thereof.

Claim 37. (previously presented) The composite of claim 34 wherein the polymeric material is selected from the group consisting of polyethylene, polypropylene, polyvinyl chloride, styrenic, polyurethane, polyimide, polycarbonate, polyethylene terephthalate, acrylics, phenolics, unsaturated polyesters, and combinations thereof.

Claim 38. (previously presented) The composite of claim 35 wherein the polymeric material has a structure selected from the group consisting of crystalline, partially crystalline, amorphous, crosslinked, fiber, cylinder, plaque, film, sheet, extrusion shape, and combinations thereof.

Claim 39. (previously presented) The composite of claim 23 wherein the electromagnetic shielding is enhanced by alignment of the nanotubes.

Claim 40. (previously presented) The composite of claim 39 wherein alignment of the nanotubes occurs by application of a shearing force.

Claim 41. (previously presented) The composite of claim 40 wherein the shearing force is selected from the group consisting of an elongation force, an extrusion force, an injection force, a stretching force, and combinations thereof.

Claim 42. (previously presented) A composite comprising nanotubes that are substantially not in contact with each other, other than along their longitudinal areas, wherein said nanotubes are aligned and oriented to provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness as compared to a composite comprising an equivalent amount of carbon nanotubes that are substantially not in contact with each other, other than their longitudinal areas and are not aligned or oriented to provide electromagnetic shielding.

Claim 43. (previously presented) The composite of claim 42 wherein the nanotubes are not bonded to each other.

Claim 44. (previously presented) A composite comprising nanotubes effectively oriented and aligned to absorb electromagnetic radiation wherein said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising PET.

Claim 45. (previously presented) The composite of claim 44 wherein absorption of electromagnetic radiation is enhanced by alignment of the nanotubes.

Claim 46. (previously presented) The composite of claim 45 wherein alignment of the nanotubes occurs by application of a shearing force.

Claim 47. (previously presented) A composite comprising nanotubes effectively oriented and aligned for absorbing electromagnetic radiation wherein said composite generates heat upon exposure to said electromagnetic radiation and said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite.

Claim 48. (previously presented) The composite of claim 47 wherein the electromagnetic radiation is selected from the group consisting of radio frequencies, microwave radiation, radiation at 20 KHz, radiation at 0.4 MHz, radiation at 15 MHz, radiation at 0.2 GHz, radiation at 1.5 GHz, and combinations thereof.

Claim 49. (previously presented) A composite comprising nanotubes wherein application of a shearing force to the nanotubes enhances shielding or absorption of electromagnetic radiation by at least 5 dB effectiveness over the electromagnetic shielding effectiveness of a control composite consisting of PET.

Claims 50 and 51. (canceled).

Claim 52. (previously presented) A composite comprising nanotubes effectively oriented and aligned to provide low radar observability to an object shielded with said composite wherein said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising carbon nanotubes that are not effectively oriented and aligned.

Claim 53. (previously presented) The composite of claim 52 wherein low radar observability comprises transmitted radiation levels of 0.001% or less.

Claim 54. (previously presented) The composite of claim 52 wherein low radar observability comprises reflected radiation levels of 16% or less.

Claims 55-75. (canceled).

Claim 76. (previously presented) A composite comprising nanotubes wherein the nanotubes have an aspect ratio, orientation and alignment, which provides said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising only PET, wherein the nanotubes are straight and bent single-wall carbon nanotubes.

Claim 77. (previously presented) The composite of claim 76 wherein the aspect ratio of the nanotubes is at least 100:1.

Claim 78. (previously presented) The composite of claim 76 wherein nanotubes are in contact with each other along their longitudinal axes such that the nanotubes that are in contact have an effective length longer than a single nanotube.

Claim 79. (previously presented) The composite of claim 76 wherein the nanotubes are dispersed homogenously in at least a portion of said composite.

Claim 80. (previously presented) The composite of claim 76 wherein the nanotubes are dispersed in a gradient fashion in at least a portion of said composite.

Claim 81. (previously presented) The composite of claim 76 wherein the nanotubes are dispersed on at least one surface of an object.

Claim 82. (previously presented) The composite of claim 76 wherein the nanotubes comprise about 0.001 to about 15.0 weight percent of the composite.

Claim 83. (previously presented) The composite of claim 76 wherein the nanotubes comprise about 0.01 to about 5.0 weight percent of the composite.

Claim 84. (previously presented) The composite of claim 76 wherein the nanotubes comprise from about 0.1 to about 1.5 weight percent of the composite.

Claim 85. (previously presented) The composite of claim 76 further comprising a polymeric material.

Claim 86. (previously presented) The composite of claim 85 wherein the polymeric material is selected from the group consisting of a thermoplastic polymer, a thermoset polymer, a non-carbonizable polymer, an elastomer, a natural polymer, and combinations thereof.

Claim 87. (previously presented) The composite of claim 86 wherein the natural polymer is selected from the group consisting of cellulose, gelatin, chitin, polypeptides, polysaccharides, polymeric materials derived from plants, animals, and microorganisms, and combinations thereof.

Claim 88. (previously presented) The composite of claim 85 wherein the polymeric material is selected from the group consisting of polyethylene, polypropylene, polyvinyl chloride, styrenic, polyurethane, polyimide, polycarbonate, polyethylene terephthalate, acrylics, phenolics, unsaturated polyesters, and combinations thereof.

Claim 89. (previously presented) The composite of claim 86 wherein the polymeric material has a structure selected from the group consisting of crystalline, partially crystalline, amorphous, crosslinked, fiber, cylinder, plaque, film, sheet, extrusion shape, and combinations thereof.

Claim 90. (previously presented) The composite of claim 76 wherein electromagnetic shielding is enhanced by alignment of the nanotubes.

Claim 91. (previously presented) The composite of claim 90 wherein the alignment occurs by application of a shearing force.

Claim 92. (previously presented) The composite of claim 91 wherein the shearing force is selected from the group consisting of an elongation force, an extrusion force, an injection force, a stretching force, and combinations thereof.

Claim 93. (previously presented) A composite comprising straight and bent single-wall carbon nanotubes that are oriented and aligned, and substantially not in contact with each other, other than along their longitudinal areas wherein said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising only PET.

Claim 94. (previously presented) The composite of claim 93 wherein the nanotubes are not bonded to each other.

Claim 95. (previously presented) A composite comprising straight and bent single-wall carbon nanotubes effectively oriented and aligned to absorb electromagnetic radiation wherein said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite consisting of PET.

Claim 96. (previously presented) The composite of claim 95 wherein absorption of electromagnetic radiation is enhanced by alignment of the nanotubes.

Claim 97. (previously presented) The composite of claim 96 wherein the alignment occurs by application of a shearing force.

Claim 98. (previously presented) A composite comprising straight and bent single-wall carbon nanotubes effectively oriented and aligned for absorbing electromagnetic radiation wherein said composite generates heat upon exposure to said electromagnetic radiation and said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite that does not generate heat upon exposure to electromagnetic radiation.

Claim 99. (previously presented) The composite of claim 98 wherein the electromagnetic radiation is selected from the group consisting of radio frequencies,

microwave radiation, radiation at 20 KHz, radiation at 0.4 MHz, radiation at 15 MHz, radiation at 0.2 GHz, radiation at 1.5 GHz, and combinations thereof.

Claim 100. (previously presented) An electromagnetically shielded composite comprising straight and bent single-wall carbon nanotubes wherein application of a shearing force to the nanotubes enhances shielding or absorption of electromagnetic radiation by at least 5 dB effectiveness over the electromagnetic shielding effectiveness of a control composite comprising only PET.

Claim 101. (previously presented) A composite comprising straight and bent single-wall carbon nanotubes effectively oriented and aligned to provide low radar observability to an object shielded with said composite and said nanotubes provide said composite with an enhancement of at least 5 dB in electromagnetic shielding effectiveness over the electromagnetic shielding effectiveness of a control composite comprising only PET.

Claim 102. (previously presented) The composite of claim 101 wherein low radar observability comprises transmitted radiation levels of 0.001% or less.

Claim 103. (previously presented) The composite of claim 101 wherein low radar observability comprises reflected radiation levels of 16% or less.

Claim 104. (previously presented) The composite of claim 23 wherein the aspect ratio effective for electromagnetic shielding is at least 500:1.

Claim 105. (previously presented) The composite of claim 23 wherein the aspect ratio of each nanotube is at least 1,000:1.

Claim 106. (previously presented) The composite of claim 76 wherein the aspect ratio of each nanotube is selected from the group consisting of at least 500:1.

Claim 107. (previously presented) The composite of claim 76 wherein the aspect ratio effective of each nanotube is selected from the group consisting of at least 1,000:1.

Claim 108. (previously presented) A nanotube composite comprising nanotubes oriented and aligned to provide an increased electromagnetic shielding effectiveness of at least 5 dB.

Claim 109. (previously presented) The composite of claim 23 wherein the enhancement in electromagnetic shielding is at least 10 dB.

Claim 110. (previously presented) The composite of claim 23 wherein the enhancement in electromagnetic shielding is at least 20 dB.

Claim 111. (previously presented) The composite of claim 23 wherein the enhancement in electromagnetic shielding is at least 50 dB.

Claim 112. (previously presented) The composite of claim 23 wherein the enhancement in electromagnetic shielding is at least 100 dB.

Claim 113. (previously presented) The composite of claim 44 wherein the enhancement in electromagnetic shielding is at least 150 dB.

Claim 114. (previously presented) The composite of claim 47 wherein the enhancement in electromagnetic shielding is at least 100 dB.

Claim 115. (previously presented) The composite of claim 52 wherein the enhancement in electromagnetic shielding is at least 150 dB.

Claim 116. (previously presented) The composite of claim 73 wherein the enhancement in electromagnetic shielding is at least 100 dB.

Claim 117. (previously presented) The composite of claim 76 wherein the enhancement in electromagnetic shielding is at least 150 dB.

Claim 118. (previously presented)The composite of claim 93 wherein the enhancement in electromagnetic shielding is at least 100 dB.

Claim 119. (previously presented)The composite of claim 95 wherein the enhancement in electromagnetic shielding is at least 150 dB.

Claim 120. (previously presented)The composite of claim 98 wherein the enhancement in electromagnetic shielding is at least 100 dB.

Claim 121. (previously presented)The composite of claim 100 wherein the enhancement in electromagnetic shielding is at least 150 dB.

Claim 122. (previously presented)The composite of claim 101 wherein the enhancement in electromagnetic shielding is at least 100 dB.